

## **REMARKS**

In the Action mailed from the United States Patent and Trademark Office December 11, 2007 claims 9, 10, and 47-52 were rejected under 35 U.S.C. 112 second paragraph as being indefinite; claim 1-4, 7, 9, 10, 47-49 and 51 were rejected under 35 U.S.C. 103 (a) as being unpatentable over USPN 2,403,608 (“Payne”) in view of USPN 4,771,805 (“Maa”); claims 1-3, 5, 7, 9, 10, 47, 48 and 50 were rejected under 35 U.S.C. 103 as being unpatentable over Payne in view of USPN 4,174,728 (“Usnick”); claims 1-7, 9,10, and 47-49 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Payne in view of USPN 5,927,684 (“Marx”); and claims 1, 2, 7-10, 47, 48 and 52 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Payne in view of USPN 2,064,567 (“Riley”). Accordingly Applicant respectfully submits the following:

### **Claim Rejections under 35 USC § 112:**

Claims 9, 10 and 47-52 stand rejected under 35 U.S.C. § 112 second paragraph as being indefinite. Applicant has amended claims 9 and 10 as noted above to denote the structural relationship between the steam purge system, the internal material isolation and containment system and the other elements of the apparatus. Accordingly, Applicant requests that the §112 rejections of claims 9 and 10 be withdrawn at this time. Additionally, Applicant has deleted the term “type” from the preamble of claims 47-52. Accordingly, Applicant requests that the §112 rejection of claims 47-52 to be withdrawn at this time.

**Rejections under 35 U.S.C. § 103(a):**

M.P.E.P. § 2141 sets forth the *Graham* factual enquiries that should be considered when making an obviousness rejection under Section 103: 1) ascertaining the scope and content of the prior art; 2) ascertaining the differences between the claimed invention and the prior art; and 3) resolving the level of ordinary skill in the pertinent art. (Citing *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966).) In addition, M.P.E.P. §§ 2141, 2142 and 2143 provides several examples of rationales that can support a rejection under 35 U.S.C. § 103. (Citing *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S. \_\_\_, 82 USPQ2d 1385 (2007).) Each rationale requires: 1) satisfying the *Graham* enquiry of showing that the scope and content of the prior art included each limitation contained in the claimed invention, and 2) satisfactorily showing that one of ordinary skill in the art would take the art teachings to overcome the identified differences under *Graham* between the claimed invention and the individual teachings of the prior art. Further, M.P.E.P. sections 2141 and 2142 indicate that the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious; rejections on obviousness cannot be sustained by mere conclusory statements. (Citing *KSR*, 82 USPQ2d at 1396 & *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).) Thus, a rejection under Section 103 cannot stand if it contains a mere statement that the claimed invention would have been obvious without explicitly enumerating the necessary factual findings. Applicant respectfully submits that the references in the Office Action, either alone or in combination, do not teach or suggest all the limitations claimed in the claim set provided herein.

**Payne in view of Maa**

Claims 1-4, 7, 9, 10, 47-49 and 51 were rejected under 35 U.S.C. 103(a) as being unpatentable over Payne in view of Maa. Applicant respectfully submits that Payne in view of Maa does not teach every aspect of the claimed invention. Accordingly, Applicant respectfully traverses this rejection.

Independent claim 1 recites, “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-heading said coke drum upon actuation of said valve closure....” Neither Payne nor Maa, independently or in combination, teach this aspect of the claimed invention.

As per the pending Action, Payne is silent as to the valve having the claimed configuration, and Maa is a valve designed to regulate high pressure fluids. Maa does not teach a valve designed for repeatedly deheading a coke drum. Maa teaches a valve which can seal out high pressure fluids without using elastomers. Abstract. For example, Maa teaches that the seal arrangement between the seat carrier and the valve body is a metallic seal where the seal ring is formed from a metallic material that is ductile and soft allowing the seal ring to be deformed so that it conforms to any irregularities in the surfaces of the seat carrier and valve body to provide a fluid tight seal. Maa’s use of soft metals to replace elastomers to seal high pressure fluids would not produce a valve as claimed in the present application which is used to repeatedly de-head a coke drum.

In direct contrast, Applicant claims a coke drum de-header system comprising “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-

heading said coke drum upon actuation of said valve closure....” As, Applicant’s valve closure oscillates between an open and closed position it must scrape accumulated coke from the valve closure as it moves. This seal is very hard, and is not resilient. A resilient seal like that taught in Maa may be effective for blocking the passage of liquid, but would quickly be destroyed if forced to scrape hardened coke from a gate as the entire contents of the coke-filled drum press down on the gate. As a result, the Maa device does not make obvious the claimed invention. The two devices were created to solve different problems and they do so in very different ways.

Claims 2-7, 9, and 10, which each depend from claim 1, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 1.

Independent claim 47, which includes features generally similar to claim 1, is patentably distinct for at least the same reasons as state with respect to claim 1.

Claims 48-49, which each depend from claim 47, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 47.

For at least this reason, Applicant respectfully submits that the prior art references do not, independently or in combination, explicitly or impliedly teach every aspect of the invention as claimed in the independent base claims. In addition, the dependent claims place further limitations on otherwise allowable subject matter. Accordingly, Applicant respectfully submits that the cited art does not teach every aspect of the claims as provided herein and therefore does not render the claims obvious as provided herein.

#### **Payne in view of Usnick**

Claims 1-3, 5, 7, 9, 10, 47, 48 and 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Payne in view of Usnick. Applicant respectfully submits that Payne in view of

Usnick does not teach every aspect of the claimed invention. Accordingly, Applicant respectfully traverses this rejection.

Independent claim 1 recites, “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-heading said coke drum upon actuation of said valve closure....” Neither Payne nor Usnick, independently or in combination, teach this aspect of the claimed invention.

As per the pending Action, Payne is silent as to the valve having the claimed configuration. Usnick teaches that “at all times a small clearance obtains between the upper seat and the upper face of the gate.” Column 3, lines 41-43. Further, Usnick teaches that “the gate-to-seat clearance is purged with gas during the periods when 100% contact is not achieved—i.e., when the gate is in transit.” Column 4, lines 44-47; See column 2, lines 43-46, column 3, lines 50-51, column 4, lines 14-15 and 23-24, and column 5, lines 24-25. The clearance taught by Usnick allows for “purge gas [to be] admitted...to oppose the buildup of process solids therein.” Column 2, lines 43-46.

In direct contrast, Applicant claims “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-heading said coke drum upon actuation of said valve closure....” Since Usnick teaches a small clearance that is maintained at all times between the upper seat and the upper face of the gate, the configuration, as taught by Usnick, cannot shear accumulated coke and effectively de-head the coke drum upon actuation of the valve closure. Consequently, Usnick does not teach the claim limitation of shearing accumulated coke and effectively de-heading the coke drum. Further, the seat is live-loaded to maintain contact

between the gate and the seat during this scraping process as the gate may deform due to the severe heat and pressure loads exerted upon it. Live-loading maintains the seal even if the gate becomes deformed. Since Usnick teaches a small clearance that is maintained at all times between the upper seat and the upper face of the gate, the configuration, as taught by Usnick, cannot maintain the seal as the gate become deformed. Consequently, Usnick does not teach the limitations included in claim 1.

Claims 2, 3, 5, 7, 9, and 10, which each depend from claim 1, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 1.

Independent claim 47, which includes features generally similar to claim 1, is patentably distinct for at least the same reasons as state with respect to claim 1.

Claims 48 and 50, which each depend from claim 47, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 47.

For at least this reason, Applicant respectfully submits that the prior art references do not, independently or in combination, explicitly or impliedly teach every aspect of the invention as claimed in the independent base claims. In addition, the dependent claims place further limitations on otherwise allowable subject matter. Accordingly, Applicant respectfully submits that the cited art does not teach every aspect of the claims as provided herein and therefore does not render the claims obvious as provided herein.

#### **Payne in view of Marx**

Claims 1-7, 9, 10, and 47-49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Payne in view of Marx. Applicant respectfully submits that Payne in view of Marx does not teach every aspect of the claimed invention. Accordingly, Applicant respectfully traverses this rejection.

Independent claim 1 recites, “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-heading said coke drum upon actuation of said valve closure....” Neither Payne nor Marx, independently or in combination, teach this aspect of the claimed invention.

As per the pending Action Payne is silent as to the valve having the claimed configuration, and Marx is a valve designed to block the flow of gases containing dust and other adulterated fluid media. Marx does not teach a valve designed for repeatedly deheading a coke drum. In particular, Marx teaches that “[t]he object underlying the present invention is to provide optimum seal conditions in so-called single plate slides....” Column 2, lines 44-47. Accordingly, Marx discloses the use of a resilient pre-stressed seal ring, (Column 2, lines 52-54) and as cited by the pending Action, embodiments with “seal rings consist[ing] of soft resilient material.” Column 3, lines 16-25. Marx’s use of resilient soft materials for seal rings would not produce a valve as claimed in the present application, which is used to repeatedly de-head a coke drum.

In direct contrast, Applicant claims a coke drum de-header system comprising “a continuously maintained metal contact seal between said valve closure and said means for supporting said valve closure, said contact seal shearing accumulated coke and effectively de-heading said coke drum upon actuation of said valve closure....” As, Applicant’s valve closure oscillates between an open and closed position it must scrape accumulated coke from the valve closure as it moves. This seal is very hard and is not resilient. A resilient seal like that taught in Marx may be effective for blocking the passage of liquid, but would quickly be destroyed if forced to scrape hardened coke from a gate as the entire contents of the coke-filled drum press

down on the gate. As a result, the Marx device does not make obvious the claimed invention.

The two devices were created to solve different problems and they do so in very different ways.

Claims 2-4, 7, 9, and 10, which each depend from claim 1, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 1.

Independent claim 47, which includes features generally similar to claim 1, is patentably distinct for at least the same reasons as state with respect to claim 1.

Claims 48-49 and 51, which each depend from claim 47, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 47.

For at least this reason, Applicant respectfully submits that the prior art references do not, independently or in combination, explicitly or impliedly teach every aspect of the invention as claimed in the independent base claims. In addition, the dependent claims place further limitations on otherwise allowable subject matter. Accordingly, Applicant respectfully submits that the cited art does not teach every aspect of the claims as provided herein and therefore does not render the claims obvious as provided herein.

#### **Payne in view of Riley**

Claims 1, 2, 7-10, 47, 48 and 52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Payne in view of Riley. Applicant respectfully submits that Payne in view of Riley does not teach every aspect of the claimed invention. Accordingly, Applicant respectfully traverses this rejection.

Independent claim 1 recites, “means for supporting said valve closure, wherein said means for supporting said valve closure comprises a seat support system...” Neither Payne nor Riley, independently or in combination, teach this aspect of the claimed invention.



As per the pending Action Payne is silent as to the valve having the claimed configuration, and Payne does not render the claim for a valve closure comprising a seat support system obvious. As a result, Riley does not render the currently amended claims obvious.

Claims 2 and 7-10, which each depend from claim 1, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 1.

Independent claim 47, which includes features generally similar to claim 1, is patentably distinct for at least the same reasons as state with respect to claim 1.

Claims 48 and 52, which each depend from claim 47, are patentably distinct from the teachings of the cited references for at least the same reason as stated with respect to claim 47.


For at least this reason, Applicant respectfully submits that the prior art references do not, independently or in combination, explicitly or impliedly teach every aspect of the invention as claimed in the independent base claims. In addition, the dependent claims place further limitations on otherwise allowable subject matter. Accordingly, Applicant respectfully submits that the cited art does not teach every aspect of the claims as provided herein and therefore does not render the claims obvious as provided herein.

**CONCLUSION**

Applicant submits that the amendments made herein do not add new matter and that the claims are now in condition for allowance. Accordingly, Applicant requests favorable reconsideration. If the Examiner has any questions or concerns regarding this communication, the Examiner is invited to call the undersigned.

DATED this 17 day of May, 2008.

Respectfully submitted,

  
Michael F. Krieger  
Attorney for Applicant  
Registration No.: 35,232

KIRTON & McCONKIE  
1800 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111  
Telephone: (801) 321-4814  
Facsimile: (801) 321-4893

JRM/  
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